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An Inaugural Dissertation,
On
The Use of Cold as a remedy in fevers.
by
Alexander M Jackson. (Va.)

Ex factis veritas.

Passed March 18th
1824
Wm. E. H
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Previously to treating of the Therapeutic virtues of Cold, it may be well to attempt an explanation of its Modus Operandi on the system, here I am sensible that I enter on disputed ground, the contests on this field of speculation have been earnest, & well maintained, much ingenuity & cogency of reasoning have been displayed on either side, which will render distinction the more difficult and costly prize. but "Non nostrum inter has tantas componere lites." Whether Cold be sedative or stimulant in its operation? may be considered a question still sub judice.

Deprive us of facts entirely, & from the common definition of Cold a forcible argument may be drawn in favour of its sedative agency. Heat is acknowledged to be the universal stimulant, & cold is defined the absence of heat, (alias the absence of stimulus) can there then be a great

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=ce paradox than to insist that cold possesses stimulant properties. Cold is a sedative by taking the place of an habitual stimulus. But this may be considered a quibbling upon words, let us draw confirmation from facts. A sedative is defined, "A medicine which has the power of diminishing animal energy, without destroying life." but this is obviously deficient, for we can easily perceive that all the most powerful and decided stimulants (when used in excessive quan=tities) will fulfil the requirements of this defin=ition. Take Alcohol for example in large quan=tity, and we have every day lamentable proofs of its "diminishing animal energy without destroying life." I would propose the following alteration. A medicine which diminishes animal energy as its first effect, without increasing ex=citement. "Stimulants are medicines which ex=cite the animal energy" and I would add with=out lessening the action of the vascular system

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The celebrated Dr. Currie who has been more industrious and successful in the investigation of this subject than any other who has attempted it, & to whom I would now make a general and grateful acknowledgment for the free use which I have made of his invaluable Reports, maintains that Cold is generally stimulant, and only sedative in immoderate degree; its stimulus he says is the stimulus of sensation produced on the surface, we should suppose that the greater the degree of Cold the greater would be the sensation produced by it, and consequently the more stimulant its effects. Under the influence of such an opinion as this Currie surely acted inconsistently to prescribe this remedy in diseases of the most inflammatory character & in the exacerbations of these diseases. The effects of the Cold bath on the body are obviously sedative, observe the reduction

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in the force of circulation, the quiescence of the capillaries, (as shown by the paleness, & shrivelled appearance of the skin;) and above all the debility which immediately succeeds it, most evident when the application of cold has been long continued or excessive in degree. The rationale which I would offer for these phenomena is, that cold applied to the surface first exhausts the capillary vessels of their excitability or nearly so, when this happens we then find paleness, & contraction of the skin; but this deficiency is gradually supplied from the larger & deeper seated vessels, this drain being kept up for some time, in other words cold being long applied induces that feebleness so commonly complained of after exposure to frosty air, or the bath; and if it should be continued in excessive degree either to the whole or a part of the body an entire privation of vitality will be the consequence. This action of cold on

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the body may be illustrated, by comparing it to the effect produced by a snow-ball placed in the focus of one mirror, on a thermometer in the focus of another opposite; in the case of the snow-ball & thermometer there is supposed to be a radiation of caloric from the thermometer (the warmer body of the two) which is conducted by the mirrors to the snow-ball, this being the colder body continues to recieve, and absorb the rays of caloric without making any return, thereby reducing the mercury of the thermometer; this reduction would go on until the snow-ball had recieved a sufficient quantity of caloric to dissolve it. Here then I would compare the deeper seated parts of the body to the thermometer when cold is applied to the surface there is a radiation of excitability from the centre to the surface, these rays of excitability are recieved at the surface, and in consequence of cold being applied there are not returned again to the parts

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whence they proceeded; this action being kept up for some time, the fund of excitability like the mercury in the thermometer is reduced several degrees, or perhaps as low as Death which is as Zero. The glow which follows this state of quiescence on the surface is adduced by some as proof of the stimulant nature of cold, but I suppose this the effect of the stimulus heat, and not of cold. For the purpose of elucidation, we will suppose a body taken from an atmosphere at 80°, and immersed in a bath at 60°: the first effect is a direct & rapid reduction of vascular energy; the system however by a happy facility, or pliancy, often observed by those accustomed to watch the operations of Medicines accomodates itself in a great measure to what at first was offensive; remove the body from the bath, to the atmosphere at 80° which it had left, and it is exposed at once to the direct

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action of 20° of heat; it is this which produces reaction on the surface, which will be more or less complete & speedy according to the recuperative powers of the system, & the degree of cold used; take a system in full health & vigor for the experiment & reaction will be almost immediate if the abstraction has not been too great; but if debilitated it will be proportionally slow in its return; this will show us the propriety of observing the glow following the use of cold as an Index to the state of the system. There are two circumstances which go far towards establishing the correctness of this idea concerning the flush of the surface; the one is that it never appears while the body is in the bath, whatever be the length of time. The other is that this freshness appears on the surface appears before the action of the larger vessels has resumed its wonted vigour or at least

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before it is at all preternaturally increased; this will appear by an examination of the force & frequency of the pulsation of the arteries at the wrist or of any large vessels near the surface so as to be thus examined. These facts show I think conclusively that this glow does not depend on the general force of circulation, it must arise then from some cause which first acts on the surface; this cause I have supposed to be a number of degrees of heat, constituting the difference in temperature between the bath, and the atmosphere. It is easy to conceive after this explanation of its Modus Operandi, how it is that cold may be varied in its results by the state of the system at the time of application; this influence of the system is observed in a greater or less degree over all articles of the Materia Medica, it is only its power of resistance against something other

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=sive & unnatural applied to it. The efficacy of Cold in suppressing or diminishing Active Hemorrhagies will afford us an argument in favour of its Sedative Operation. It here constitutes a part of an Antiphlogistic or Antistimulant treatment, variously conjoined with other sedatives, as sugar of lead, Evacuants &c. Now if Cold be a stimulant we strangely adapt our means to the end in view. Cold is sometimes used as one of the means of commanding hemorrhage from wounds, let us enquire its probable manner of action here. It is a common subject of observation, that the hemorrhage from wounds is in an inverse ratio to the injury which the vessels have sustained; if an artery be opened by a lancet, a knife, or other sharp edged instrument, the flow of blood will be much more profuse than when the vessel is torn extensively: facts of this sort

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are innumerable on the records of Surgery; the deduction which I would make from them is, that vitality in the coats of the ves=els aids and influences in some way the free circulation of the blood; that in prop=ortion to the violence offered in opening the coats of these vessels is the loss of vitality or "animal energy;" & the less energy there is in the vessel, the less hemorrhage takes place from it; now in incised wounds there is most vitality left in the vessel, consequen=tly the greatest flow of blood, and the greatest necessity for the means of commanding it; these are the ligature which obstru=cts the circulation mechanically, the hot iron which destroys entirely the vitality of the bleeding extremity, and some other articles which act in the same way as the latter though not so powerfully, Cold is I conceive of this character, it is often

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resorted to, & found very successful in producing coagulation in the extremity of the bleeding vessel; this can happen in no other way than by a previous diminution of the vitality of the vessel for if this had remained unaltered, the blood would still have flowed, & no time been allowed for coagulation to take place. This efficacy of cold in suppressing hemorrhagies, goes far towards proving its power of "diminishing animal energy" which will constitute it a sedative.

What is the action of cold on sensible surfaces? Dr. Chapman in his Therapeutics, speaking of Opium, argues that it is stimulant from the fact of its irritating inflamed & sensible surface; as an inflamed eye, the membranes of the nose, urethra &c. Cold is quite the reverse of this especially in a "moderate degree"; the soothing nature of cold water to an inflamed eye is well known,

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and we are instinctively driven to the use of some cooling application to obtain relief from the pain of a burn; having then such authority for pronouncing any thing that proves irritating to sensible surfaces stimulant, and experience on the other hand to sustain the assertion that cold is not only not irritating, but even an anodyne to painfully inflamed & sensible surfaces, surely it is an inference so just as not to be denied me, that it is a sedative.
The cases in which cold is so frequently & successfully used by Surgeons indicate very clearly its sedative impression, In inflammations of large joints, & from wounds cold applied in some permanent form is attended with great advantage.
Drs Chapman & Jackson, differ with Currie as to the manner in which cold affusion operates in breaking up fever, the former supp-

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posing it to arrest or change the nature of the disease by virtue of the impression which it makes on the system, through the medium of the surface; the latter that it is by abstracting the preternatural heat of the body, a few degrees of which according to his experiments, & observations will cause an increased circulation, increasing debility, thirst, and all the principal symptoms of fever. This explanation of Currie would I think better apply to sponging, Bathing, or some more permanent & continued mode of using cold than affusion; but when the fever is arrested, & all its morbid associations dispersed by the forcible dashing of a single bucket of water on the patient, it must be effected rather by the horror, the commotion which it causes, than by the abstraction of heat, for in this instance the cold is too soon removed to work this effect.

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Directions for the use of Cold.

Much of the opposition which has been made to the introduction of Cold into practice, may be ascribed to the ignorance, or neglect of those directions which should govern us in its use, & which have been so ably detailed in the Medical Reports by Currie.

Cold may be conveyed either through the medium of air, or water, to the body for medical purposes; it is of the latter medium that we design to speak chiefly. Ventilation was the mode & I believe the only one in which Sydenham prescribed Cold in fevers, this though it may now appear to us a tame & moderate use of the remedy, must (from its entire contrariety to the ordinary plan of treating fevers in his day) have appeared to his cotemporaries quite a daring innovation Dr Franklin urged the great propriety of keeping the room of a patient in fever cool with a free current of air

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in fact the observation of every practitioner must teach him the importance of attending to this direction, and as subservient to it of breaking up those assemblages of friends which too commonly crowd & heat the sick-room. Free Ventilation is one of the most successful means of eradicating contagion, whose most fruitful sources are Jails, Hospitals, transports ships, & such crowded places. When there is much moisture about the surface, a current of air will lower the temperature of the body very considerably by increasing evaporation; Currie found the heat of surface to be reduced more rapidly by a breeze even four or five degrees higher temperature, than when the body was kept in a calm still place as many degrees lower. The common methods of using Cold Water in fevers may be divided into the Sudden & Violent, & the more Moderate & permanent; under the first division are included Affusion, and Immersion; in the second we

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place Sponging, & General Ablution. Currie gives a general preference to Affusion in practice; it is I think better calculated than Sponging to arrest a fever, to break the calenation of morbid actions; but the latter is perhaps best fitted to subdue the force of a paroxysm, by reducing the activity of circulation & heat of body. A peculiarity of Sponging is that in consequence of the surface being frequently moistened we have the advantage of a greater number of evaporations than in any other mode, by each of which the heat of body is as much abstracted as by the actual contact of the water itself. If we are doubtful whether there be sufficient energy in the system to justify the use of cold, we can much more safely feel our way with the sponge, as the system might bear one application of this sort, when the febrile sensibility could not sustain with safety the shock of an Affusion.

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Sponging may be rendered much milder in its operation, (as indeed any other mode of applying Cold Water) by carefully wiping the body dry immediately after it, so as to prevent evaporation. A modification of Ablution, & a very convenient method of using cold, is to roll the patient in a blanket, & pour the water over him frequently, so as to keep up its constant influence. The most energetic application of cold which I have ever known in actual practice, was the covering a patient completely with ice, this was in a case of Bilious fever where an excessive heat prevailed, which no depletion short of producing Death could have subdued; the practice adopted was found very successful. — The internal use of Cold is of ancient date, Hippocrates advocated the utility of Cold drinks in febrile diseases; though in modern practice they seem rather permitted than enjoined. Cold drink operates in the same way as cold applied to the surface

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only in an inferior degree from the want of evaporation; hence the same rules will govern as in its use whether externally or internally. It is impossible to establish a standard degree of temperature for the water applied to the surface; the variations required by changes or differences in climate, nature & period of disease, constitution of the patient &c. would be so numerous as to destroy any general rule in regard to it: as a medium the cold bath may be assumed at 65°, the cool at 75° & the tepid at 95° Fahrenheit, this will be varied as we approach, or recede from the tropics, as the disease is more or less advanced, or the constitution more or less vigorous. We may suppose that what is cool in England, will be considered cold in the W Indies. Currie used generally pump-water saturated with salt at 40° or 50° for cold affusion in the early stages of fever, but as the case advanced, and the heat & strength declined, the temperature of the water was increased,

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be sometimes used in the following order Fresh water, Vinegar & Water, & Salt Water as the case progresses. Vinegar though good must be excluded from common use by its expensiveness. Salt by its stimulant property will counteract in a considerable degree the debilitating effects of Cold, & thus is better calculated for doubtful cases, or advanced periods of disease where much debility prevails. In the delirium of fevers it is highly important to use cold applications, such as cold wet cloths frequently renewed, or what is more efficacious (if to be had) lumps of ice wrapped in cloths & applied to the head.

Having thus slightly considered the common modes of using Cold, we will now give the principal signs by which its use is indicated. In all cases where Cold is administered there should be heat, & a sensation of heat; in other words, the temperature of the surface as ascertained by the Physicians hand, or thermometer a more

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correct reporter,) should be steadily equal to, or above the natural temperature, and the patient should at the same time experience an unvarying feeling of warmth. If cold affusion be administered in the cold stage of fevers before this heat of surface is manifest, the respiration is interrupted, in some cases suspended nearly, the pulse becomes fluttering, feeble, & very frequent, the surface & extremities become cold, & shrivelled; & the patient seems to struggle with the pangs of instant dissolution: these serious consequences will serve to impress us with the strict necessity which exists for our being present, & examining the condition of the patient before so energetic a remedy is used. It is not only requisite that the patient should experience a sensation of heat, but also essential that this should not be fluctuating, it is sometimes so unsteady that the slightest exposure to cold, even the slipping off the bed-clothes will

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produce chillness; such a state of system as this will be equivalent to no sense of heat, & cold should be forbidden in this case as in all others whenever it becomes disagreeable. This fluctuation & unsteadiness of the heat & sense of heat on the surface seems to be owing to an imperfect development of vascular action, the system is here probably in the same condition in which we find it in the paroxysm of an intermittent, when the cold stage is terminating, but the hot stage not fairly formed; when the heat as well as the blood is accumulated in the centre of the system, & the vital power is struggling to give them that propulsion to the surface which terminates in profuse perspiration, & carries off the disease.
It will follow from what has been said that it will be safest & most advantageous to use cold at the height of exacerbation, or just at the commencement of declination; also in

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the early stages of fever, in preference to the more advanced ones; in Chapter fifth Volume the first of the Medical Reports Currie gives several cases in which Cold was used in different stages of the fever, by these we find that when Cold affusion was used in the first exacerbation health was speedily restored, but when it was deferred to the sixth, eighth, or tenth day, it was necessary to repeat the affusion in a ratio nearly equal to the days of its continuance.
At a late period there is not so much heat & strength to support the system, & bring about a salutary reaction; and the deranged actions are much more indissolubly linked, here if we use Cold at all it must be in a very moderate degree; it will frequently be necessary in cases of this kind, & wherever the use of Cold is of doubtful propriety, to follow it with some means of support; as friction with dry salt, & flannel, warm wine or some

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other cordial until a glow is established on the surface, which is an evidence of safety. If chilliness is produced by the application of cold, even though the heat of surface is not reduced to a natural standard, we must discontinue it immediately, only applying it as long as it proves refreshing & grateful to the feelings. There are no stated periods of the day at which cold must be used, it will be safe at any time when no sense of chilliness is present, strength not too much exhausted, heat steadily above natural, & no general or profuse sensible perspiration; a slight moisture on the surface is no bar to the use of cold, In the commencement of sweating especially if it has been induced by violent exercise in a person of good constitution little or no danger is to be apprehended from the application of cold to the surface; it may sometimes even be resorted to with great

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The reason why cold is forbidden in the prog=ress of sweat is obvious, sweating itself induces debility in two ways, first by the evacuation of a part of the fluids of the body, secondly by the cooling nature of the process; to add then the powerful sedative cold to all this, is to de=press the system to a dangerous degree.
The physician is often liable to be deceived in his examination of the temperature of the body after a sweat, by the heat of bed clothes inter=fering with this cooling process; but in such cases the heat will be rapidly reduced by ex=posing the body to the air, and thus the true state of the system will be ascertained.
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provided there is not much exhaustion from perspiration & fatigue, may bathe with impunity in Cold Water, Examples to strengthen this position, may be found among those engaged in Glass Works, Furnaces, Lime-Kilns, & other heated places. The means of counteracting the ill effects of Cold (whether arising from its imprudent application either externally or internally after violent exercise, or from its use as a remedy in fevers,) are, in the first case the Warm Bath, Laudanum, a bladder or bottle filled with warm Water, & applied to the scrobiculus Cordis, Stimulant & Cordial drinks, frictions with flannel, dry Salt &c. for the latter case it will generally be sufficient to make use of frictions & stimulant drinks. To introduce greater accuracy in practice, & in histories of diseases, Currie was the first to use a thermometer, so constructed as to be easily applied to the axilla, or under the tongue, (the parts of the body which

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afford the most correct indications of its temperature; this instrument should be considered an indispensable appendage to the bath, for the bare report of our sense of feeling (liable as all our senses to error) must often be found a precarious dependence. Moreover this tactus eruditus allowing it to be sufficiently accurate, is only the acquirement of experience, the success of the young practitioner therefore without some other guide must for some time be fortuitous.
In making an estimate of temperature, we should not only examine the tongue, or axillae, but also the extremities.
A fixed attention on other objects lessens, & fear increases the effect of cold. Salivation is no bar to the use of cold, but on the other hand the action of mercury is found to be aided by it. May this not be by its febrifuge virtue? we know that when the febrile action runs high, the mercurial action is difficultly

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established. Cold by reducing the febrile action, gives the mercurial the ascendancy, & thus proves an auxiliary. Currie advises infirm persons to take some little exercise before going into the cold bath, in order to secure a timely reaction. But I would ask why the necessity for this precaution if cold be as he maintains a stimulant? = In diseases of high action the application of cold should rather be permanent than sudden. = I should suppose that in ascertaining the heat of surface by a thermometer, it would be proper to make an allowance of a few degrees for the natural difference between the heat of youth & age.

On the use of Cold in the Pyrexiæ.

1 Of Intermittent Fever. The number of cases of this fever reported by Currie as treated with cold affusion are not numerous, but suffi=

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cient to show the safety at least, if not the advisableness of the practice; the intention of this plan is I conceive still the same as in the former Methodus Medendi, that is to hurry on the two first stages of the fever, to a resolution in the last, but the manner in which this is effected is very much at variance with the old modes of cure; formerly close confinement in a warm room, & bed, stimulant beverages &c were used to promote the last or sweating stage. Drawing the chill cold either externally or internally is expressly forbidden by Currie; on the contrary he should be kept warm, & for this purpose it may be well to roll the patient in a blanket, & keep up a constant warmth on the surface by tepid or warm water poured on at short intervals; the action in this stage of fever is confined to the deeper seated parts, & is struggling to come

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out on the surface; to make use of cold then would be to depress it still farther when already too low. But when the hot stage has come on, or in other words the action reached the surface, then it has become more equalised, the larger vessels not so much engorged, the fever then becomes general, & great heat and thirst prevail till the sweating stage comes on to relieve it; instead though of waiting the tedious process by which Nature brings about this salutary ~~process~~ ~~the~~ action, we employ cold, which at once reduces this high action, relaxes the surface, diaphoresis is thus promoted, & proves as it is wont to do the crisis of the paroxysm. As a caution to the careless Currie has reported a case in which cold affusion was employed while the patient was shivering, pulse small & frequent, extremities shrunk & cold; in this condition the cold bine was dashed over him as usual; but his

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breathing was for some minutes almost suspen
ded, his pulse at the wrist not to be felt, the pul
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coldness spread over the surface, & when resp
=iration returned it was short, irregular, and
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the use of stimulant remedies. Cold can not be
used to such extent in Intermittent as in Con
=tinued fevers, because of the difference in
their tenacity of heat, it being retained much
more firmly in the latter than the former,
the profuse perspiration of Intermittents
carries off the heat of body more rapidly
than it is discharged in Continued fevers. When
a fever is accompanied with, or symptomatic
of local inflammations, cold must then be
withheld, or sparingly used; this I think
will constitute a bar frequently against
the use of cold in Intermittents, which are
often attended with visceral congestions.

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Continued Fevers.

1 Typhus. There are few facts in our science more ably supported by experiment, & high authority, than that of the usefulness of Cold in Typhus fever; it is considered by European physicians (particularly in G Britain) one of the most powerful & efficacious means adopted in the treatment of it; & the same positive & irrefragable testimony is only lest in this country because of our happy exemption from the calamity, one which must always in a greater or less degree be the concomitant of a dense population, & which will without extraordinary care fall in Wars Gorgon train of evils. Currie has devoted a large portion of his valuable work to the consideration of this subject, & from his own practice as well as from that of other eminent physicians, has collected & reported a variety of cases, from the milder to the most aggravated forms of the disease

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Affusion is the mode which Currie preferred for applying Cold in this fever, (as indeed in most others) particularly in the early stages, & it is laid down by him as a first principle, that its effects will be more or less salutary in proportion as it is adopted early, or during the first stage of the disease; such being the fact we ought always to employ it (if at our option) the first, second or third days of excitement; the water should be first dashed with greatest force on the surface, as the disease advances, the strength weakens, & the heat of body diminishes, we should raise the temperature of the Water, saturate it with salt, & apply it by Ablution, instead of by Affusion. It will be well in this advanced period to administer warm Wine, or some Cordial after it. It should be used at the height of Exacerbation, or just at the commencement of declination. The time of day is unimportant. Coma, Stupor, & de-

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lirium are frequent symptoms of this fever, & the determination to the head upon which they depend, may generally be more successful by counteracted by shaving the head, & applying a cold wet cloth, or pounded ice when the case is extreme, than by any other treatment; see how soon the turbulence of the madman is allayed by this simple practice. In the report made by Dr Demodale (physician to the London House of Recovery, inserted in the Work of Currie,) after giving a brief sketch of the symptoms, & treatment in several cases of this fever, he concludes by saying. "It is unnecessary to relate other cases in which the cold Affusion has been used. In all the good effects of it have been strikingly manifest, & in no instance has the disease terminated fatally after the use of this remedy." Mr Marshall surgeon to the Cheshire Regt. in a letter to Dr Currie is scarcely less qualified, & positive in his good report of this

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practice. "Of sixty four cases" says he " of typhus in which cold was employed at an early period, sixty recovered in a short time by only three or four applications of the remedy, the remaining four which were considerably advanced in their progress before it was employed, although they were little or perhaps not at all shortened in their duration still recovered." The report of Dr Gomez & many others of the same nature, & equally satisfactory might be extracted were more proof necessary, or did the proper limits of this paper admit

Of Bilious Remittent fever.

We have few reports of trials made with Cold in this fever, though there can be no doubt from the high excitement, great heat, sensation of heat, restlessness, & delirium with which it is often attended, that it will be found a fit case for its

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exhibition. The greatest restriction by which its use will be limited, will arise perhaps from the state of the Liver; we should examine this, & if from the symptoms it appear in a state of congestion, this may constitute a contraindication. Currie assigns as a reason why cold is not found so well adapted to the fevers of the East Indies, that they are so often accompanied with, & symptomatic of hepatic, or some other visceral congestion. The benefit derived from cooling applications to the head in violent cases of Bilious fever is well known, & in some cases the excitement of the brain is so great as only to be subdued by a long continued application of ice. I have known only one case of ~~[illegible]~~ this fever in which a general use of cold was fairly tried, this was under the direction of a physician remarkable for the ingenuity, as well as energy of his practice; here the emp=

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ace was marked with a most intolerable heat, great thirst, restlessness, & delirium existed, which were found to be unconquerable by any depletions within the limits of safety. the patient was completely enveloped in ice, until the burning sensation was exchanged for a sense of coolness, this was (though in a less degree) repeated once or twice, & the practice was crowned with the most speedy relief. An endemick of a very malignant character has for several years prevailed with considerable fatality in the county of Botetourt Virginia, the remote cause of this fever is supposed to be derived from a marsh covering about seventy or a hundred acres, this filled with a black mud, which during the heats of summer, emits a very offensive odour, sometimes perceptible at the distance of two miles, particularly at night, when these effluvia are most noxious

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so well is this fact known, that some whose business requires it, remain through the day near this spot without the least dread of danger, but flee from it as night approaches. In consequence of the water or mud of this marsh possessing brackish properties, it was before the settlement of that district of country a great resort for deer, & hence called the Lick. As far back as the memory of the oldest settlers extends, the vicinity of this spot has been visited by a fever bearing an intermittent type, in the latter part of summer & beginning of Autumn; but in the summer of 1821 it assumed a much more aggravated form, in consequence it was supposed of the imprudent draining of a pond adjoining the Lick in the month of June or some time early in the summer. This by exposing to the action of the sun fish, plants, & insects, in a putrefying condition, so polluted

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the atmosphere as to change the type of the dis-ease, & render it greatly more violent, the return of cold weather eradicated this fever, or rendered it comparatively mild & harmless, In the writings of Pringle may be found many observations which throw light on the causes & phenomena of this sick fever, (for so we will call it for the present) it is indeed so nearly analogous to the fever which this author has described as prevailing among the British soldiers at Eyndhoven, in the Dutch Brabant, that I will here adopt his history of it with a few slight alterations. The situation on which the British Army was here encamped, was naturally low, & damp, but the moisture & consequent unhealthfulness was at this time still farther increased by the inundations which had been made about the fortified towns, & a part of the water had been let off in the beginning of

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summer, these grounds which had formerly been covered with water being now left half drained, & marshy, filled the air with moist & putrid exhalations. The summer had been hitherto warm, but throughout July & August whilst the sickness was greatest, the weather was fair, close, & sultry, near the inundations the nocturnal fogs were thick & fœtid. The heats abated about the beginning of September, & the distempers in proportion. The first & worst appearance of the epidemic was in the form of an ardent fever, the men were suddenly seized with a violent headache & frequently with a delirium, if sensible they complained also of grievous pains in their back, & loins, of intense thirst, & a burning heat, with sickness & oppression at the stomach, or with retchings & vomitings of bile, others had an evacuation of the bile by stool, with a tenesmus & pains

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in the bowels. Dr Rush in his commentary on this passage of Pringle calls this the Inflammatory Bilious fever, or the second grade of Bilious fever which prevails in this country. The most violent cases of this sick fever terminated in Death about the fifth, & sixth days; it was from the first attended with excessive heat of the skin, the patient at the same time complaining of a burning sensation of heat, great irritability of the stomach from the first, & in some instances a matter of Coffee ground appearance was vomited in the latter stages of the fever, great excitement about the head, (marked by a fiery redness of the eyes, & high delirium,) the skin as yellow as a pumpkin, & the case terminated by profuse perspiration, which tinged the bed clothes with a colour as yellow as that of the skin. This fever certainly presented strong indications for the use of Cold, but I knew of but one case in

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which there was more than a local application of it to the head, & in this the sponge was moderately used at the earnest imprecation of the patient, who declared himself greatly refreshed by it, here notwithstanding, a fair trial was not made, the relief obtained was so great & evident, that we can not but consider it a most appropriate remedy for such a case

Of the Phlegmasia.

Currie was for a long time doubtful of the propriety of using Cold in this order of diseases, but became at length satisfied of its safety at least in some of them, as Cynanche, Influenza, Scarlatina, measles &c. these two last however will be more appropriately considered in the order Exanthemata. Cold is not found to answer a valuable purpose but on the contrary to prove hurtful in the fevers of the East Indies accompanied with hepatic congestions. We would imply

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from what has been said by Currie on the use of Cold in the Phlegmasia, that he was only convinced of the safety, & not of the general utility of the remedy in these diseases. —— Of the Exanthemata. ——

At a time when the eruption which characterises this Order of Pyrexia was considered critical, Cold in any form would have been deadly; but modern pathologists have looked on the cutaneous affection only as they would on any other symptom, observing that it is entirely regulated by, & dependent on the degree of previous excitement; if by our vigorous practice this be speedily reduced, that will appear but slightly. It was in this Order of diseases that Sydenham made his distinguished application of cool air, & the benefit so clearly derived from this moderate use, should we think have afforded an indication for the more vigorous employment of the remedy; but easy as it may now seem

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the credit of this induction was reserved for the late & ingenious Dr. Currie, who whilst his colemporaries admitted with caution even cool air, attacked the Exanthemata with buckets of cold Water. The diseases of this order to which cold is perhaps best adapted, are Scarlatina, & Small Pox, Currie made of an accidental use of it in a case of measles, which did not prove injurious a he had supposed, but experiments on this head are not as yet sufficiently numerous or satisfactory, to do away that dread very naturally created by the great liability to pulmonary affections which this disease leaves behind it

Of Scarlatina.

This is a disease which is characterized by great heat of body, amounting in some violent cases to 110° & 12° Fah.t There is also high delirium, the Efflorescence on the surface seems to contract the inflammation about the throat, & is it=

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=self the effect of the excitement, for the fever may be extinguished before the efflorescence has a chance to appear; So speedy a dissolution of Contagious diseases is not considered advisable, as by that means the future influence of the Contagion will not be prevented. Cold has been found as we might readily have anticipated from the great general heat, & strong excitement about the brain, a valuable remedy in this fever. In support of this practice we have the strong allestations of Dr Gregory professor at Edinburg, he made his first experiments with it in his own family, & with the happiest results. Dr Gerard of Liverpool communicated to Dr Currie his good opinion of this treatment in very decided language, A single Affusion he found sufficient to check it if not far advanced, so as not to require a repetition. When this fever is fully confirmed the heat is so intense as to require a more frequent repeti=

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tion of the cold than in other cases; here I think that ablution with the sponge would be the most successful mode of reduction.

Of Small Pox. — It is the distinct species of this disease to which cold is found best adapted, it is forbidden by Currie in the Confluent form unless in the earliest stages of the disease, he made a trial of it in some cases of Purple Confluent Small Pox, having mistaken them for Scarlet fever, but it proved rather injurious than beneficial.

Of Erysipelas. Currie recommends a trial of cold in this affection, I have no doubt that it will answer a valuable purpose while there are heat, & dryness of the skin, high arterial action, & delirium which often accompany it when violent, It would be well I think to use it before the livid appearance of the skin is observed, it should then be forbidden probably for the same reasons which oppose

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its use in the Purple Confluent Small Pox; in either of these cases there is too great a prostration of the powers of the system to bear so enfeebling a remedy.

The Hemorrhagia. In all active Hemorrhages Cold either generally or topically applied must be an essential adjuvant to depletion or whatever else is used for the purpose of diminishing arterial action

Of Epistaxis. To suppress a discharge of blood from the nose besides the mechanical means, & the styptic powders or substances sometimes used, ice water should be poured over the head, or pounded ice applied to it, in very obstinate cases it will be well to make use of Cold by general Affusion over the body till an ague is produced. — Of Hæmoptysis. The use of Cold in this disease, as its name implies a weakness in some part of the lungs has been cautious & limited; in all ordinary cases

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we are content to expose the body to a current of cool air, in addition to this it will be well or even necessary in extreme cases (when arterial action is forcible, & the quantity of blood discharged considerable,) to sponge the chest, & apply pads of cold cloths wet with vinegar in the axillæ. Dr Chapman considers that the cold bath which has been recommended by some in these cases, is rather too intrepid a practice.

Of Hemorrhoids. Cold may be here applied to the bleeding vessels, either by means of a gut first introduced empty into the rectum, & then tightly distended with cold water, or by Clysters of it. — Of Uterine Hemorrhage. The patient should in all instances be kept cool, & cold wet cloths frequently renewed to be applied to the abdomen, & particularly over the regio pubis, als cold injections may be thrown up the rectum. If the Hemorrhage occur in a case of labour, & proves copious, if the ordinary

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mode of treatment has failed, we then should hasten delivery by manual assistance, after this has taken place, apply a considerable degree of Cold over the Abdomen, introduce the Cold tampong, or a lump of ice in the vagina so as nearly to fill it up. ———.

Thus briefly have I brought to a conclusion the last or Practical head of my Essay, in the original design it was much fuller, but in order to bring this Paper within proper limits I have been obliged to curtail, though it will still I fear prove of tiresome length to those who have the task of reading it. The object of this production it will be perceived has not been to publish a discovery, but its design was to remove if possible some small portion of the opposition which is so obstinately made against the reception of Cold as a remedy in fevers, by reaching the Golden rules of Currie for its use; for I can not but repeat that much of the ob-

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struction which this practice has encountered in obtaining publick confidence, & general adoption, arises from inattention, or incorrect judgment as to the state of the system; it is by some perhaps denied admission on account of the close attention necessary in administering it, & by some I am induced to suppose it is ridiculed for its extreme simplicity, by this class it will be likened to the fictitious practice of Sangrado, there is it is true nothing complicated and wonderous about it, but to use the language of a distinguished Writer. "It were better perhaps ~~that~~ Medicine like other branches of natural knowledge, were brought from its hiding place, & exhibited in the simplicity of science, & the nakedness of Truth." It is nothing of a Black Art which we practise to command the gazing admiration of a multitude, but a Science based upon Reason, & offering to her votaries the heartfelt gratitude of suffering

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humanity. It is wonderful that men of reputed observation should so long have passed unheeded the numerous facts to be found on the records of Medicine which testify the extensive usefulness of Cold in Practice; but it is still greater matter of surprise when those of distinguished sagacity, & indefatigable research, have tried, hounted out, & duly regulated its use, it should still be looked upon with horror, or treated with indifference. Articles of acknowledged poisonous properties are often the subjects of zealous experiment, surely then the danger attending it can not be allowed as an excuse against a Trial, the article is energetic, though not necessarily, or even commonly dangerous.

I would do injustice to my feelings on this occasion, were I to conclude without tendering the sentiment of gratitude which I entertain for the unwearied assi-

dexterity with which each one of my distinguished Preceptors in this University has discharged the duties of his respective chair. May a long & uninterrupted continuance of health support them the Guardians of a fruitful Nursery, & the bright ornaments of a rising nation. — Finis —

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